Mr. Ron Terrell
Milestone Contractors, L. P.
5950 South Belmont Avenue, P.O. Box 421459
Indianapolis, Indiana 46242-1459

Re: 011-14387
First Administrative Amendment to
FESOP 011-10547-00046

Dear Mr. Terrell:

Milestone Contractors, L. P., located at 4312 Whitelick Drive, Whitestone, Indiana was issued a FESOP on May 27, 1999 for a batch mix and drum mix hot asphalt plant. A letter requesting a change in the permit was received on May 22, 2001.

The source has requested de-rating the maximum permitted operating capacity of the source from 450 tons per hour to a lower capacity of 300 tons per hour. This change will constitute a reduction in the potential uncontrolled and controlled emissions. However, the allowable emissions which keeps the source below 100 tons per year, the applicability threshold for Part 70 permit will stay the same. Hence, the permit change is subject to 326 IAC 2-8-10 which constitute a "revision to descriptive information where the revision will not trigger a new applicable requirements". The permit is hereby administratively amended as follows (changes are bolded and deletions are struck-through for emphasis):

1. Section A.2, item (1) and Section D.1 item (1) in the process description table of the FESOP is revised to reflect the new source capacity of 300 tons per hour. Revision is as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

(1) one (1) aggregate dryer capable of processing ~~450~~ **300** tons per hour of raw material, equipped with one (1) 115 million (MM) British thermal units (Btu) per hour waste oil-fired burner, using natural gas and No. 2 distillate fuel oil as back-up fuels, with one (1) knockout box and one (1) jet pulse baghouse in series for particulate matter (PM) control, exhausting at one (1) stack (ID No. S-1);

(2) one (1) asphalt drum mixer capable of processing ~~450~~ **300** tons per hour of raw material, with a hydro carbon capture system for hydrocarbon emissions control, exhausting to the aggregate dryer, and one (1) jet pulse baghouse for particulate matter (PM) control, exhausting at one (1) stack (ID No. S-1);

(3) one (1) batch tower (enclosed portions of the batch plant), processing a maximum of ~~450~~ **300** tons per hour of raw material, with fugitive particulate matter emissions from the batch tower controlled by a batch tower fugitive dust capture system which exhausts to the jet pulse baghouse which exhausts at one (1) stack (ID No. S-1). The batch tower consists of the following:

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]

(1) one (1) aggregate dryer capable of processing ~~450~~ **300** tons per hour of raw material, equipped with one (1) 115 million (MM) British thermal units (Btu) per hour waste oil-fired burner, using natural gas and No. 2 distillate fuel oil as back-up fuels, with one (1) knockout box and one (1) jet pulse baghouse in series for particulate matter (PM) control, exhausting at one (1) stack (ID No. S-1);

(2) one (1) asphalt drum mixer capable of processing ~~450~~ **300** 0 tons per hour of raw material, with a hydro carbon capture system for hydrocarbon emissions control, exhausting to the aggregate dryer, and one (1) jet pulse baghouse for particulate matter (PM) control, exhausting at one (1) stack (ID No. S-1); and

(3) one (1) batch tower (enclosed portions of the batch plant), processing a maximum of ~~450~~ **300** tons per hour of raw material, with fugitive particulate matter emissions from the batch tower controlled by a batch tower fugitive dust capture system which exhausts to the jet pulse baghouse which exhausts at one (1) stack (ID No. S-1). The batch tower consists of the following:
   (a) one (1) hot elevator;
   (b) one (1) hot aggregate screen system;
   (c) five (5) hot aggregate storage bins;
   (d) one (1) hot aggregate weigh hopper;
   (e) one (1) 150 gallon hot liquid asphalt weigh bucket; and
   (f) one (1) pugmill mixer with a maximum hot mix asphalt holding capacity of 12,000 pounds.

2. Reduction in emissions will result due to the change, however the allowable emissions will stay the same:

Pollutant	Existing Total Source Emissions Before Control (tons/yr)	New Total Source Emissions Before Control (tons/yr)	Existing Total Source Emissions after Control (tons/yr)	New Total Source Emissions after Control (tons/yr
PM	69,225.56	46,229	85.83	57.46
PM10	9,059.41	6,102.17	12.21	8.29
SO2	402.33	402.33	98.99	98.99
NOx	97.63	97.63	97.63	97.63
VOC	66,252.22	66,244.57	99.0	91.34
CO	43.22	43.22	43.22	43.22

See the attached spreadsheet for detailed emission calculations.

All conditions of the permit shall remain unchanged and in effect. Please attach a copy of this amendment and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Aida De Guzman at (800) 451-6027, press 0 and ask for Aida De Guzman or extension (3-4972), or dial (317) 233-4972.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
APD
cc: File - Boone County
U.S. EPA, Region V
Boone County Health Department
Air Compliance Section Inspector - Eric Courtright
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

Company Name: Milestone Contractors, L.P.
Plant Location: 4312 Whitelick Drive, Whitestown, Indiana 46075
County: Boone
Date Received: May 22, 2001
Operating Permit No.: 'F011-10547-00046
1st Administrative Amendment 'AA 011-14387-00046
Reviewer: Aida De Guzman

**** aggregate dryer burner****

The following calculations determine the amount of emissions created by the combustion of waste oil
@ 0.75 % sulfur, 1.020 % ash, based on 8,760 hours of use and
US EPA's AP-42, 5th Edition, Section 1.11 - Waste Oil Combustion, Tables 1.11-1, 1.11-2, and 1.11-3.

Criteria Pollutant: 115 MMBtu/hr * 8760 hr/yr * Ef (lb/1000 gal) = (ton/yr)
140,000 Btu/gal * 2000 lb/ton

P M:	65.3	lb/1000 gal =	**234.87**	**ton/yr**
P M-10:	52.0	lb/1000 gal =	**187.16**	**ton/yr**
S O 2:	110.3	lb/1000 gal =	**396.66**	**ton/yr**
N O x:	19.0	lb/1000 gal =	**68.36**	**ton/yr**
V O C:	1.0	lb/1000 gal =	**3.60**	**ton/yr**
C O:	5.0	lb/1000 gal =	**17.99**	**ton/yr**

The following calculations determine the amount of emissions created by natural gas combustion, from the aggregate dryer burner, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.4 - Natural Gas Combustion, Tables 1.4-1 and 1.4-2.

Criteria Pollutant: 115 MMBtu/hr * 8,760 hr/yr * Ef (lb/MMcf) = (ton/yr)
1000 Btu/cf * 2,000 lb/ton

P M:	7.6	lb/MMcf =	**3.83**	**ton/yr**
P M-10:	7.6	lb/MMcf =	**3.83**	**ton/yr**
S O 2:	0.6	lb/MMcf =	**0.30**	**ton/yr**
N O x:	190.0	lb/MMcf =	**95.70**	**ton/yr**
V O C:	5.5	lb/MMcf =	**2.77**	**ton/yr**
C O:	84.0	lb/MMcf =	**42.31**	**ton/yr**

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil
@ 0.50 % sulfur, from the aggregate dryer burner, based on 8,760 hours of use and
US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-2, and 1.3-5.

Criteria Pollutant: 115 MMBtu/hr * 8,760 hr/yr * Ef (lb/1,000 gal) = (ton/yr)
140,000 Btu/gal * 2,000 lb/ton

P M:	3.3	lb/1000 gal =	**11.87**	**ton/yr**
P M-10:	3.3	lb/1000 gal =	**11.87**	**ton/yr**
S O 2:	71.0	lb/1000 gal =	**255.45**	**ton/yr**
N O x:	24.0	lb/1000 gal =	**86.35**	**ton/yr**
V O C:	0.20	lb/1000 gal =	**0.72**	**ton/yr**
C O:	5.0	lb/1000 gal =	**17.99**	**ton/yr**

The maximum potential emissions from the aggregate dryer burner due to fuel combustion are the following:

Criteria Pollutant:			**Worst Case Fuel**
P M:	**234.87**	**ton/yr**	Waste Oil
P M-10:	**187.16**	**ton/yr**	Waste Oil
S O 2:	**396.66**	**ton/yr**	Waste Oil
N O x:	**95.70**	**ton/yr**	Natural Gas
V O C:	**3.60**	**ton/yr**	Waste Oil
C O:	**42.31**	**ton/yr**	Natural Gas

****hot oil heater****

The following calculations determine the amount of emissions created by natural gas combustion, from the hot oil heater, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.4 - Natural Gas Combustion, Tables 1.4-1, 1.4-2, and 1.4-3.

Criteria Pollutant: 2.2 MMBtu/hr * 8,760 hr/yr * Ef (lb/MMcf) = (ton/yr)
1000 Btu/cf * 2,000 lb/ton

P M:	7.6	lb/MMcf =	**0.07 ton/yr**
P M-10:	7.6	lb/MMcf =	**0.07 ton/yr**
S O 2:	0.6	lb/MMcf =	**0.01 ton/yr**
N O x:	100.0	lb/MMcf =	**0.96 ton/yr**
V O C:	5.5	lb/MMcf =	**0.05 ton/yr**
C O:	84.0	lb/MMcf =	**0.81 ton/yr**

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil @ 0.50 % sulfur, from hot oil heater, based on 8760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-1, 1.3-2, and 1.3-6.

Criteria Pollutant: 2.2 MMBtu/hr * 8,760 hr/yr * Ef (lb/1,000 gal) = (ton/yr)
140,000 Btu/gal * 2,000 lb/ton

P M:	3.3	lb/1000 gal =	**0.23 ton/yr**
P M-10:	3.3	lb/1000 gal =	**0.23 ton/yr**
S O 2:	71.0	lb/1000 gal =	**4.89 ton/yr**
N O x:	20.0	lb/1000 gal =	**1.38 ton/yr**
V O C:	0.34	lb/1000 gal =	**0.02 ton/yr**
C O:	5.0	lb/1000 gal =	**0.34 ton/yr**

The maximum potential emissions from the hot oil heater due to fuel combustion are the following:

Criteria Pollutant:		**Worst Case Fuel**
P M:	**0.23 ton/yr**	Distillate Oil
P M-10:	**0.23 ton/yr**	Distillate Oil
S O 2:	**4.89 ton/yr**	Distillate Oil
N O x:	**1.38 ton/yr**	Distillate Oil
V O C:	**0.05 ton/yr**	Natural Gas
C O:	**0.81 ton/yr**	Natural Gas

****insignificant combustion sources****

Insignificant combustion units at this source include one (1) propane fired 0.5 MMBtu/hr hand torch, and one (1) No. 2 fuel oil fired 0.35 MMBtu/hr space heater.

The following calculations determine the amount of emissions created by the combustion of #2 distillate fuel oil @ 0.50 % sulfur, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.3 - Fuel Oil Combustion, Tables 1.3-2, 1.3-4, and 1.3-8.

Criteria Pollutant: 0.35 MMBtu/hr * 8,760 hr/yr * Ef (lb/1,000 gal) = (ton/yr)
140,000 Btu/gal * 2,000 lb/ton

P M:	3.3	lb/1000 gal =	**0.04 ton/yr**
P M-10:	3.3	lb/1000 gal =	**0.04 ton/yr**
S O 2:	71.0	lb/1000 gal =	**0.78 ton/yr**
N O x:	20.0	lb/1000 gal =	**0.22 ton/yr**
V O C:	0.34	lb/1000 gal =	**0.00 ton/yr**
C O:	5.0	lb/1000 gal =	**0.05 ton/yr**

The following calculations determine the amount of emissions created by propane combustion, based on 8,760 hours of operation and US EPA's AP-42, 5th Edition, Section 1.5 - Liquefied Petroleum Gas Combustion, Table 1.5-1.

Criteria Pollutant: 0.5 MMBtu/hr * 8,760 hr/yr * Ef (lb/1000 gal) = (ton/yr)
91.5 MMBtu/1000 gal * 2,000 lb/ton

P M:	0.4	lb/1000 gal =	**0.01 ton/yr**
P M-10:	0.4	lb/1000 gal =	**0.01 ton/yr**
S O 2:	0.0	lb/1000 gal =	**0.00 ton/yr**
N O x:	14.0	lb/1000 gal =	**0.34 ton/yr**
V O C:	0.5	lb/1000 gal =	**0.01 ton/yr**
C O:	1.9	lb/1000 gal =	**0.05 ton/yr**

The maximum potential emissions of the insignificant combustion sources are the following:

Criteria Pollutant:

P M:	**0.05 ton/yr**
P M-10:	**0.05 ton/yr**
S O 2:	**0.78 ton/yr**
N O x:	**0.55 ton/yr**
V O C:	**0.02 ton/yr**
C O:	**0.10 ton/yr**

*** * aggregate drying: drum-mix or batch-mix plant * ***

The following calculations determine the amount of worst case emissions created by aggregate drying before controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Table 11.1-2 for a batch mix dryer which has the capability of combusting either fuel oil or natural gas:
(Note: These emissions represent the emissions from a batch mix plant which are higher than those from a drum mix plant)

Pollutant: Ef lb/ton x 300 ton/hr x 8,760 hr/yr
2,000 lb/ton

Criteria Pollutant:

P M:	35	lb/ton =	**45,990.00 ton/yr**
P M-10:	4.5	lb/ton =	**5,913.00 ton/yr**
VOC:	0.011647	lb/ton =	**15.30 ton/yr**

The VOC emission factor for aggregate drying includes HAP emissions which are assumed to be VOC.

*** * conveying / handling * ***

The following calculations determine the amount of emissions created by material handling, based on 8.760 hours of use and AP-42, Section 13.2.4, Equation 1. The emission factor for calculating PM emissions is calculated as follows:

PM-10 Emissions:

E = k*(0.0032)*(((U/5)^1.3)/((M/2)^1.4))
= 1.12E-03 lb PM-10/ton
2.37E-03 lb PM/ton
where k = 0.35 (particle size multiplier for <10um)
0.74 (particle size multiplier for <30um)
U = 12 mph mean wind speed
M = 4.5 material moisture content (%)

300 ton/hr * 8,760 hrs/yr * Ef (lb/ton of material) = (ton/yr)
2,000 lb/ton

Total PM 10 Emissions: 1.48 tons/yr
Total PM Emissions: 3.12 tons/yr

*** * storage * ***

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

Material	Silt Content (wt %)	Pile Size (acres)	Storage Capacity (tons)	PM Emissions tons/yr	PM-10 Emisions tons/yr
Sand	1.2	0.76	19,800	0.19	0.07
Stone	1.1	1.92	50,310	0.45	0.16
Slag	0.9	0.31	8,160	0.06	0.02
RAP	0.2	0.96	25,200	0.04	0.01
Total				**0.74**	**0.26**

Sample Calculation:

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
= 1.39 lb/acre/day
where s = 1.2 % silt
p = 125 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Ep (storage) = Ef * sc * (20 cuft/ton) * (365 day/yr)
(2,000 lb/ton)*(43,560 sqft/acre)*(12 ft)
where sc = 19,800 tons storage capacity

PM = 0.19 tons/yr P M-10: 35% of PM = 0.07 tons/yr

*** *cold mix VOC storage emissions * ***

The following calculations determine the amount of VOC emissions created by the application of cutback asphalt with a typical value of 35% by volume of diluent, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 4.5, Table 4.5-1.

VOC Emission Factor = 1.7% weight percent flash-off of cold mix
Potential Throughput (tons/yr) = 3,942,000 tons/yr stockpile mix

Potential VOC Emissions (tons/yr) = Potential Throughput (tons/yr) * wt percent flash-off
Potential VOC Emissions = 66,225.60 tons/yr

* Weight percent flash-off is based on a 7.0 percent by weight of cutback asphalt, containing 35% by volume of diluent of which 95% volatilizes, in stockpile mix and 24% by weight of cutback asphalt evaporated (from Table 4.5-1).

*** * summary of source emissions before controls * ***

Criteria Pollutants:

P M: 46,229.00 ton/yr
P M-10: 6,102.17 ton/yr
S O 2: 402.33 ton/yr
N O x: 97.63 ton/yr
V O C: 66,244.57 ton/yr (VOCs include HAPs from aggregate drying operation)
C O: 43.22 ton/yr

*** * source emissions after controls * ***

In order to qualify for the FESOP program, this facility must limit PM-10, SO2, and VOC emissions to 99.0 tons per year. Consequently, SO2 emissions from the aggregate dryer must be limited to 93.33 tons per year (99.0 ton/yr - 5.67 ton/yr from the other combustion sources).

* Emissions of PM and PM-10 from aggregate drying operations are controlled with a 99.880 % control efficiency.

The following calculations determine the amount of emissions created by natural gas combustion based on a fuel usage limitation of 1,007 MMcf

Natural Gas: 1,007.400 MMcf/yr / 2,000 lb/ton * Ef (lb/MMcf) = (ton/yr)

P M:	7.6	lb/MMcf =	**4.59E-03**	**ton/yr ***
P M-10:	7.6	lb/MMcf =	**4.59E-03**	**ton/yr ***
S O 2:	0.6	lb/MMcf =	**0.30**	**ton/yr**
N O x:	190.0	lb/MMcf =	**95.70**	**ton/yr**
V O C:	5.5	lb/MMcf =	**2.77**	**ton/yr**
C O:	84.0	lb/MMcf =	**42.31**	**ton/yr**

The following calculations determine the amount of emissions created by No.2 distillate fuel oil @ 0.50 % sulfur based on a fuel usage limitation of 2,629,014 gal/yr:

No. 2 Distillate Oil: 2,629,014 gal/yr / 2,000 lb/ton * Ef (lb/1,000 gal) = (ton/yr)

P M:	3.3	lb/1000 gal =	**5.21E-03**	**ton/yr ***
P M-10:	3.3	lb/1000 gal =	**5.21E-03**	**ton/yr ***
S O 2:	71.0	lb/1000 gal =	**93.33**	**ton/yr**
N O x:	24.0	lb/1000 gal =	**31.55**	**ton/yr**
V O C:	0.20	lb/1000 gal =	**0.26**	**ton/yr**
C O:	5.0	lb/1000 gal =	**6.57**	**ton/yr**

The following calculations determine the amount of emissions created by waste oil @ 0.75 % sulfur based on a fuel usage limitation of 1,693,061 gal/yr:

Waste Oil: 1,693,061 gal/yr / 2000 lb/ton * Ef (lb/1000 gal) = (ton/yr)

P M:	65.3	lb/1000 gal =	**0.07**	**ton/yr ***
P M-10:	52.0	lb/1000 gal =	**0.05**	**ton/yr ***
S O 2:	110.3	lb/1000 gal =	**93.33**	**ton/yr**
N O x:	19.0	lb/1000 gal =	**16.08**	**ton/yr**
V O C:	1.0	lb/1000 gal =	**0.85**	**ton/yr**
C O:	5.0	lb/1000 gal =	**4.23**	**ton/yr**

Criteria Pollutant:		**Worst Case Fuel**
P M:	**0.07 ton/yr ***	Waste Oil
P M-10:	**0.05 ton/yr ***	Waste Oil
S O 2:	**93.33 ton/yr**	Distillate/Waste Oil
N O x:	**95.70 ton/yr**	Natural Gas
V O C:	**2.77 ton/yr**	Natural Gas
C O:	**42.31 ton/yr**	Natural Gas

Primary Fuel Usage Limitations

Fuel Oil: waste oil

93.33	tons SO2/year limited	*	7195.71	Kgals	=	1693.06	Kgals
396.66	tons SO2/year potential			year potential			year limited

Secondary Fuel Usage Limitations

Natural Gas: N/A

Fuel Oil: #2 distillate fuel oil

93.33	tons SO2/year limited	*	7195.71	Kgals	=	2629.01	Kgals
255.45	tons SO2/year potential			year potential			year limited

Primary fuel equivalence limit for natural gas based on SO2 emissions from re-refined waste oil

0.30	n.g. potential emissions (ton/yr)	/	396.66	W.O. potential emissions (ton/yr)
1007.4	n.g. potential usage (MMCF/yr)		7195.71	W.O. potential usage (kgal/yr)

= 0.0054 Kgal W.O. burned / MMCF n.g. burned

Primary fuel equivalence limit for #2 distillate fuel oil based on SO2 emissions from re-refined waste oil

255.45	#2 F.O. potential emissions (ton/yr)	/	396.66	W.O. potential emissions (ton/yr)
7195.71	#2 F.O. potential usage (kgal/yr)		7195.71	W.O. potential usage (kgal/yr)

= 0.6440 Kgal W.O. burned / Kgal #2 F.O. burned

*** * source emissions after controls * ***

	misc. combustion:		nonfugitive		
P M:	0.27 ton/yr x	100.00%	emitted after controls =	**0.27 ton/yr**	
P M-10:	0.27 ton/yr x	100.00%	emitted after controls =	**0.27 ton/yr**	
	aggregate drying:		nonfugitive		
P M:	45,990.00 ton/yr x	0.12%	emitted after controls =	**55.19 ton/yr**	
P M-10:	5,913.00 ton/yr x	0.12%	emitted after controls =	**7.10 ton/yr**	
VOC:	15.30 ton/yr x	100.00%	emitted after controls =	**15.30 ton/yr**	
	conveying/handling:		fugitive		
P M:	3.12 ton/yr x	50%	emitted after controls =	**1.56 ton/yr**	
P M-10:	1.48 ton/yr x	50%	emitted after controls =	**0.74 ton/yr**	
	storage piles:		fugitive		
P M:	0.74 ton/yr x	50%	emitted after controls =	**0.37 ton/yr**	
P M-10:	0.26 ton/yr x	50%	emitted after controls =	**0.13 ton/yr**	
	cold mix VOC storage:		fugitive		
VOC:	66,225.60 ton/yr x	77.05	Limited Diluent Throughput (tons/yr)	:	**73.20 ton/yr**

*** * summary of source emissions after controls * ***

Criteria Pollutant:	**Non-Fugitive**	**Fugitive**	**Total**
PM:	**55.53 ton/yr**	**1.93 ton/yr**	**57.46 ton/yr**
PM-10:	**7.42 ton/yr**	**0.87 ton/yr**	**8.29 ton/yr**
S O 2:	**98.99 ton/yr**	**0.00 ton/yr**	**98.99 ton/yr**
N O x:	**97.63 ton/yr**	**0.00 ton/yr**	**97.63 ton/yr**
V O C:	**18.14 ton/yr**	**73.20 ton/yr**	**91.34 ton/yr**
C O:	**43.22 ton/yr**	**0.00 ton/yr**	**43.22 ton/yr**

Hazardous Air Pollutants (HAPs)

**** aggregate dryer burner****

The following calculations determine the amount of emissions created by waste oil combustion, from asphalt heating, @ 0.0072 % lead, based on 8,760 hours of use and US EPA's AP-42, 5th Edition, Section 1.11 - Waste Oil Combustion, Tables 1.11-1 and 1.11-4.

Hazardous Air Pollutants (HAPs): 115 MMBtu/hr * 8760 hr/yr / 140,000 Btu/gal * 2000 lb/ton * 1000 gal/kgal * Ef (lb/1000 gal) = (ton/yr)

			Potential To Emit	Limited Emissions
Lead:	0.396	lb/1000 gal =	1.42 ton/yr	1.71E-03 ton/yr
Arsenic:	0.11	lb/1000 gal =	0.40 ton/yr	4.75E-04 ton/yr
Cadmium:	0.0093	lb/1000 gal =	0.03 ton/yr	4.02E-05 ton/yr
Chromium:	0.02	lb/1000 gal =	0.07 ton/yr	8.63E-05 ton/yr
Cobalt:	0.00021	lb/1000 gal =	0.00 ton/yr	9.07E-07 ton/yr
Manganese:	0.068	lb/1000 gal =	0.24 ton/yr	2.94E-04 ton/yr
Nickel:	0.011	lb/1000 gal =	0.04 ton/yr	4.75E-05 ton/yr
		Total HAPs =	2.21 ton/yr	2.65E-03 ton/yr

Note: The above metallic HAP emission calculations represent the worst case of waste oil, distillate fuel oil, and natural gas combustion.

*** * aggregate drying: batch-mix plant * ***

The following calculations determine the amount of HAP emissions created by aggregate drying before & after controls, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 11.1 - Hot Mix Asphalt Plants, Table 11.1-10 for a batch mix dryer which can be fired with either fuel oil or natural gas. The HAP emission factors represent the worst case emissions (natural gas combustion).

Pollutant: Ef lb/ton x 300 / 2000 lb/ton x 8760 hr/yr

Hazardous Air Pollutants (HAPs):			Potential To Emit	Limited Emissions
Acetaldehyde:	6.40E-04	lb/ton =	0.84 ton/yr	0.84 ton/yr
Benzene:	3.50E-04	lb/ton =	0.46 ton/yr	0.46 ton/yr
Ethylbenzene:	3.30E-03	lb/ton =	4.34 ton/yr	4.34 ton/yr
Formaldehyde:	8.60E-04	lb/ton =	1.13 ton/yr	1.13 ton/yr
Quinone:	2.70E-04	lb/ton =	0.35 ton/yr	0.35 ton/yr
Toluene:	1.80E-03	lb/ton =	2.37 ton/yr	2.37 ton/yr
****Total Polycyclic Organic Matter (POM):**	1.270E-04	lb/ton =	0.17 ton/yr	0.17 ton/yr
Xylene:	4.30E-03	lb/ton =	5.65 ton/yr	5.65 ton/yr
		Total HAPs =	15.30 ton/yr	15.30 ton/yr

** total POM includes 2-Methylnapthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, and Pyrene.

Note: The above organic HAP emission calculations represent the worst case between a drum mix and a batch mix plant.

*** * summary of source HAP emissions potential to emit * ***

Hazardous Air Pollutants (HAPs):

Acetaldehyde:	**0.841**	ton/yr
Arsenic:	**0.396**	ton/yr
Benzene:	**0.460**	ton/yr
Cadmium:	**0.033**	ton/yr
Chromium:	**0.072**	ton/yr
Cobalt:	**0.001**	ton/yr
Ethylbenzene:	**4.336**	ton/yr
Formaldehyde:	**1.130**	ton/yr
Lead:	**1.425**	ton/yr
Manganese:	**0.245**	ton/yr
Nickel:	**0.040**	ton/yr
Quinone:	**0.355**	ton/yr
Toluene:	**2.365**	ton/yr
Total POM:	**0.167**	ton/yr
Xylene:	**5.650**	ton/yr
Total:	**17.515**	**ton/yr**

Note: Since the source was limited to less than 100 tons/yr PM, PM10, & SO2 emissions, the source's HAPs emissions will also follow at 15.3 tons/yr total (see below).

**** Summary of Source HAP Limited Emissions****

Acetaldehyde:	**0.841**	ton/yr
Arsenic:	**0.000**	ton/yr
Benzene:	**0.460**	ton/yr
Cadmium:	**0.000**	ton/yr
Chromium:	**0.000**	ton/yr
Cobalt:	**0.000**	ton/yr
Ethylbenzene:	**4.336**	ton/yr
Formaldehyde:	**1.113**	ton/yr
Lead:	**0.002**	ton/yr
Manganese:	**0.000**	ton/yr
Nickel:	**0.000**	ton/yr
Quinone:	**0.335**	ton/yr
Toluene:	**2.365**	ton/yr
Total POM:	**0.167**	ton/yr
Xylene:	**5.650**	ton/yr
Total:	**15.269**	**ton/yr**

*** * miscellaneous * ***

326 IAC 7 Compliance Calculations:

The following calculations determine the maximum sulfur content of distillate fuel oil allowable by 326 IAC 7:

0.5 lb/MMBtu x 140,000 Btu/gal= 70 lb/1000gal

70 lb/1000gal / 142 lb/1000 gal = 0.5 %

Sulfur content must be less than or equal to 0.5% to comply with 326 IAC 7.

The following calculations determine the maximum sulfur content of waste (residual) oil allowable by 326 IAC 7:

1.6 lb/MMBtu x 140,000 Btu/gal= 224 lb/1000gal

224 lb/1000gal / 147 lb/1000 gal = 1.5 %

Sulfur content must be less than or equal to 1.5% to comply with 326 IAC 7.

326 IAC 6-3-2 Compliance Calculations:

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rates in excess of 30 tons per hour:

limit = 55 * (300 ^ 0.11) - 40 = 63.00 lb/hr or
275.95 ton/yr

Since this emission limit exceeds the Subpart I allowable emission limit of 84.94 tons per year, compliance with the PM limit pursuant to 40 CFR 60.90, Subpart I will satisfy the requirements of 326 IAC 6-3-2 and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

PM-10 Emission Limit for Aggregate Dryer:

(99.0 tons PM-10/yr - 2.74 tons PM-10/yr from other souces)
= 96.3 tons PM-10/yr = 21.98 lbs/hr

PM-10 emissions from the aggregate dryer are controlled to less than 21.98 lbs/hr (Will comply)

40 CFR Part 60.90, Subpart I (Standards of Performance for Hot Mix Asphalt Plants) Compliance Calculations:

The following calculations determine compliance with the NSPS, which limits stack emissions from asphalt plants to 0.04 gr/dscf:

$$\frac{55.19 \text{ ton/yr} * 2000 \text{ lb/ton} * 7000 \text{ gr/lb}}{525{,}600 \text{ min/yr} * 56{,}563 \text{ dscf/min}} = 0.026 \text{ gr/dscf}$$ (will comply)

Allowable particulate emissions under NSPS equate to 84.94 tons per year. 19.39 lbs/hr

Note:
SCFM = 81,326 acfm * (460 + 68)*(1-0.045) / (460 + 265)
= 56,563 scfm

Assumes exhaust gas temperature of 265F, exhaust gas moisture content of 4.5% and exhaust gas flow of 81,326 acfm.